

REMARKS

Claims 1, 2 and 5-12 remain pending after response.

References Cited in Specification

Applicants acknowledge the statement of the Examiner regarding the citation of prior art references in the specification.

Withdrawal of Previous Rejections

Applicants acknowledge with appreciation the withdrawal of the previous prior art rejections.

Rejection of Claims 1-2 and 5-11 Under 35 USC 103(a)

Claims 1-2 and 5-11 stand rejected under 35 USC 103(a) as being unpatentable over JP '889 (newly-cited) in view of Sakata et al and Peascoe '948, as evidenced by newly-cited JP '554.

This rejection is respectfully traversed.

The present invention pertains to a rubber composition that can produce a vulcanizate having excellent ozone resistance, flexing fatigue and oil resistance. The rubber composition is formed from α,β -ethylenically unsaturated nitrile-conjugated diene copolymer rubber (A) having a number average molecular weight of 50,000 to 150,000, and a content of α,β -

ethylenically unsaturated nitrile monomer units of 28 to 50 wt%, α,β -ethylenically unsaturated nitrile-conjugated diene copolymer rubber (B) having number average molecular weight of 1,000 to 20,000, ethylene- α -olefin copolymer rubber (C), and a graft copolymer (D).

The graft copolymer (D) is obtained by performing graft copolymerization on a mixture of an aromatic vinyl compound and an α,β -ethylenically unsaturated nitrile monomer with an ethylene-propylene-unconjugated copolymer. The content of structure units of the ethylene-propylene-unconjugated copolymer is 20 to 70 wt%. A ratio of the graft copolymer (D) with respect to 100 parts by weight in total of said rubber (A), rubber (B) and rubber (C) is 1 to 30 parts by weight. Also, a composition ratio of the rubber (A), rubber (B) and rubber (C) is rubber (A): 20 to 79 wt%, rubber (B): 1 to 30 wt%, and rubber (C): 20 to 50 wt%. The claimed invention is neither disclosed nor suggested by the cited prior art.

The newly-cited JP '889 reference has a publication date of September 5, 2003, which is subsequent to applicants' claimed priority date of April 23, 2003. The Examiner at page 6 of the Action states that "applicant cannot rely upon the foreign priority papers to overcome the rejection applied above under JSR Corp. reference [JP '889], because a translation of the foreign priority papers has not been made of record in accordance with 37 CFR 1.55".

In response, applicants submit herewith a verified translation of Japanese priority application No. 2003-118646, having a filing date of April 23,

2003. Applicants thus antedate the cited JP '889 reference.

The remaining of the cited prior art references fail to teach or suggest the claimed invention.

The newly-cited JP '554 reference is described at paragraphs [0005] and [0006] of the specification. The reference does not describe a rubber composition comprising a copolymer rubber (B), and has a problem to be solved relating to flexing fatigue resistance.

The Sakata et al reference is directed to unsaturated nitrile-conjugated diene-type rubber compositions. Sakata et al fails to disclose or suggest a rubber composition that is formed from α,β -ethylenically unsaturated nitrile-conjugated diene copolymer rubber (A) having a content of α,β -ethylenically unsaturated nitrile monomer units of 28 to 50 wt%.

Sakata et al at column 5, lines 1-2 describes using a monomer (a) that can be acrylonitrile or methacrylonitrile. Sakata et al further at column 5, lines 8-18 states:

The content of the olefinically unsaturated nitrile monomer unit (A) formed by monomer (a) is 55 to 80 wt %, preferably 55 to 75 wt % based on 100 wt % of the total of the monomer unit (A) and the conjugated diene monomer unit (B) formed by monomer (b) in view of the repeating unit constituting the NBR-typed rubber. *The content of the monomer unit (A) less than 55 wt % results in a requirement of a large amount of the NBR-typed rubber to be blended with other polymer for improving the oil resistance or the like of a rubber product, and leads to a reduction in the weather resistance or the like.* (emphasis added).

As a result, Sakata et al teaches away from a content of α,β -ethylenically unsaturated nitrile monomer units of 28 to 50 wt%.

Further, Sakata et al fails to disclose the graft copolymer (D) such as is described in the present invention. As a result, Sakata et al would fail to have the flexing fatigue resistance, such as is found in the present invention.

The additionally-recited Peascoe reference fails to disclose a rubber composition that includes the copolymer rubber (A), (B) and (C) as required by the pending claims.

In contrast, the present invention provides a rubber composition having excellent balanced ozone resistance, flexing fatigue resistance and oil resistance, by including the graft copolymer (D) together with copolymer rubber (A), copolymer rubber (B) and copolymer rubber (C), where the copolymer rubber (A) has α,β -ethylenically unsaturated nitrile monomer units of 28 to 50 wt%. These results can be readily observed in Table 1 at page 37 of the specification.

As a result, one having ordinary skill in the art would not be motivated by Sakata et al and Peascoe to produce the claimed invention, especially in light of Sakata et al teaching away from the copolymer rubber (A) having α,β -ethylenically unsaturated nitrile monomer units of 28 to 50 wt%, and the fact that the Peascoe and JP '554 references do not teach the use of rubber (B).

In view of such deficiencies, the Examiner fails to present a *prima facie* case of obviousness in relation to the pending claims. Further, the unexpected

results of the invention, such as ozone and flexing fatigue resistance, demonstrate unexpected results that would rebut any obviousness that could be alleged.

This rejection is thus without basis and should be withdrawn.

Rejection of Claim 12 under 35 USC 103(a)

Claim 12 stands rejected under 35 USC 103(a) as being unpatentable over newly-cited JP '889 in view of Sakata et al and Peascoe, as evidenced by newly-cited JP '554, and Middlebrook. This rejection is respectfully traversed.

In response, as discussed above, applicants have antedated the JP '889 reference. In view of the deficiencies of the additionally-cited prior art as discussed above, the rejection of claim 12 is without basis and should be withdrawn.

The application is now believed to be in condition for allowance, and an early indication of same earnestly is solicited.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petitions for a two (2) month extension of time for filing a reply in connection with the present application, and the required fee of \$450.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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Attachment: Verified translation of JP appln. No. 2003-118646